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STORAGE



TORONTO
GENERAL METEOROLOGICAL REGISTER
FOR THE YEAR 1891.

STORAGE

REMARKS ON THE METEOROLOGICAL RESULTS AT TORONTO FOR THE YEAR 1891.

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TEMPERATURE.

The mean temperature of 1891 was $45^{\circ}87$, being $1^{\circ}74$ warmer than the average of the past half century, and $0^{\circ}67$ warmer than 1890. This excess is mainly due to the high temperature of the winter and autumn, the summer being cool and slightly lower than the normal, bearing out the fact that Toronto presents great regularity in the annual temperature, combined with great variability in the course of the year. The mean temperature of the several months was in nine instances above, and in three instances below their proper normals, the average excess to the average defect being in the ratio of $2^{\circ}91$ to $1^{\circ}77$. On each of 207 days the mean temperature was above the normal temperature of that particular day, and below on 158 days. The mean temperature of each month, with the difference from the normal, was January, $24^{\circ}15 + 1^{\circ}67$; February, $28^{\circ}02 + 5^{\circ}48$; March, $28^{\circ}81 + 6^{\circ}11$; April, $43^{\circ}24 + 2^{\circ}40$; May, $51^{\circ}51 - 0^{\circ}59$; June, $64^{\circ}34 + 2^{\circ}29$; July, $63^{\circ}69 - 3^{\circ}98$; August, $65^{\circ}56 - 0^{\circ}73$; September, $62^{\circ}49 + 4^{\circ}04$; October, $47^{\circ}91 + 1^{\circ}66$; November, $37^{\circ}05 - 0^{\circ}96$; December, $33^{\circ}64 + 7^{\circ}56$. Dividing the year into the ordinary seasons, we have for winter, $26^{\circ}99$; spring, $53^{\circ}03$; summer, $63^{\circ}91$; autumn, $39^{\circ}53$. The thermic anomalies differ from the normal temperature proper to the latitude. Winter, $-8^{\circ}87$; spring, $-4^{\circ}60$; summer, $-2^{\circ}35$; autumn, $-4^{\circ}80$. The only month during the year in which the observed temperature exceeded the normal value of the latitude was September, which was $0^{\circ}90$ warmer. The mean daily range for the year was $16^{\circ}45$, the greatest monthly average occurring in May ($21^{\circ}12$) and the least in March, $12^{\circ}49$. The greatest range, $37^{\circ}8$, occurred on the 30th April, and the least, $4^{\circ}5$, on the 20th of January. The warmest month relatively was December, estimated by its excess ($7^{\circ}56$) above the normal temperature. The coldest absolutely was January ($24^{\circ}15$), but July was the coldest relatively, its mean ($63^{\circ}69$) being $3^{\circ}98$ below its proper normal. The climatic difference was $41^{\circ}41$. The warmest day was the 16th June, mean temperature $77^{\circ}62$, and the coldest 16th January, with a mean temperature of $5^{\circ}13$, but the warmest day relatively was the 25th September, it being $18^{\circ}80$ above its proper normal, and the coldest the 29th November, which was $19^{\circ}7$ below. The average temperature of the warmest and coldest days from former years was $77^{\circ}87$, and $2^{\circ}28$ below zero. The highest temperature of the year $91^{\circ}9$ occurred on the 16th June; the lowest, $2^{\circ}0$ below zero, on the 16th January. The annual range was from these extremes $93^{\circ}9$, being $1^{\circ}8$ more than in 1890, and $9^{\circ}1$ below the average range. There were thirty-three instances on which the temperature at the hour of observation was 2° above the normal, and only five when a defect of an equal amount occurred. The most striking deviations from the normal curve of temperature have been as follows:—

Jan.	1	mean deviation + $14^{\circ}57$	Dec.	2	5	mean deviation + $11^{\circ}80$
"	19 to 24	"	"	9 to 15	"	+ $12^{\circ}60$
"	28 to 31	"	"	21 to 26	"	+ $14^{\circ}15$
Feb.	16	"	"	29	"	+ $16^{\circ}55$
"	23 to 25	"	Jan.	3	"	— $14^{\circ}45$
April	22	"	"	16	"	— $16^{\circ}45$
May	8 to 10	"	Feb.	4	"	— $15^{\circ}25$
June	15 to 16	"	May	16	"	— $11^{\circ}13$
Sep.	17 to 18	"	July	7 to 8	"	— $10^{\circ}73$
"	21 to 28	"	"	26 to 28	"	— $8^{\circ}65$
Oct.	2 to 5	"	Nov.	28 to 29	"	— $17^{\circ}74$
Nov.	9 to 12	"	Dec.	17	"	— $13^{\circ}10$
"	21 to 23	"				
		+ $11^{\circ}41$				

BAROMETRIC PRESSURE.

The mean height of the Barometer was 29.6385 inches, being 0.0198 inches in excess of the average. The month which showed the greatest deviation from the normal was May, 0.0091 in excess. April showing the least 0.0004, in defect. Average deviation without reference to sign was small, being only 0.037. The highest reading was 30.266 inches at 8 a.m. of October 12th, and the lowest 28.536 inches, at 4 p.m. of November 23rd, giving a range of pressure of 1.730 inches.

The number of days of large abnormal variations in which the average pressure differed by two tenths and upwards from the normal, was 118, the law of their distribution is well marked by their greater frequency in the winter than in the summer months, the greatest number (19) occurring in November, and the least (3) in August and September.

HUMIDITY.

The mean humidity of the year was 75, being 2 per cent. less than the average, the greatest monthly humidity was (85) in January, and the least (59) in May.

There were 32 cases of complete saturation at the hour of observation : 7 in January, 3 in February, 8 in March, 2 in April, 2 in September, 1 in October, 5 in November and 4 in December, the least humidity of the year at the hour of observation was 13 on the 1st of May at 4 p.m.

CLOUDS.

The extent of sky clouded was on the average of the year six-tenths of the whole. September was the clearest month and November the most cloudy, during the year there were 60 days completely clouded, being 12 less than the average (1890-79), the greatest number (18) occurring in January, none being registered in July.

WIND.

The resultant direction of the wind was N 57° W. showing 9° more southing than 1890, and 4° more than the average of the 15 years to 1889.

The mean velocity of the wind without reference to direction was 7.33 miles. The most windy month was March with an average of 11.40 miles per hour, and the least windy was September with an average of 4.20 miles. The windiest day was the 8th of December, average velocity 39.06 miles per hour, and the day of least velocity 10th June, average velocity 0.70 miles per hour.

The highest velocity in one hour was 60.0 miles from 2 to 3 p.m. of the 17th November.

RAIN AND SNOW.

The total depth of rain that fell during the year was 26.735 inches, being 0.677 inches less than the average and upwards of 5 inches less than the rainfall of 1890. The depth of snow 47.8 inches was 22.0 inches less than the average, and 4.8 less than the snowfall of 1890. August is the most rainy month as to quantity (4.380 inches), and November with reference to the number of rainy days (14). May is the least rainy month less than half an inch having fallen about one-sixth of the usual quantity for that month.

The most rainy day was the 9th of August when 2.435 inches fell, there was only one other day during the year that over one inch fell, on the 16th of June when 1.28 inches fell in a little over an hour, but on the 11th of June 0.62 inches fell in 16 minutes betwixt 2 and 3 p.m.

The heaviest fall of snow in one day was 5.2 inches on the 11th of January. Rain fell on 125 days being 12 more than the average number and 20 less than in 1890. Snow fell on 70 days being 4 more than the average and 11 less than in 1890. There were 193 days on which neither rain or snow fell, in 1890 the number was 159.

The rain occupied 602 hours and the snow 301 hours, in its fall giving a total of 903 or upwards of 37 days 15 hours when rain or snow was actually falling.

THUNDER STORMS.

Of the 19 thunder storms occurring during the year, the first lightning was on the 18th April, and the latest on October 26th, 1 was recorded in May, 4 in June, 5 in July, 5 in August, 3 in September, 1 in October. The most severe storms were on the 11th and 16th of June; 14th, 28th and 29th of July; 9th, 11th and 26th of August: lightning alone was observed on 4 occasions.

AURORA.

Auroras were more numerous than in the previous year. Of the 18 observed 2 were of the second class, 7 of the third and 9 of the fourth class. There were 212 nights favourable for observation, the most brilliant displays occurring on the 7th and 12th of April, 28th of August and 8th, 9th, 10th and 11th September.

SUNSHINE.

The total duration of bright sunshine during the year was 2065.4 hours, number of hours the sun was above the horizon 4463.3. ratio of registered to possible 0.46 hours.

Frost occurred in every month but in June, July, August and September, the last frost in spring was on the 23rd of May, and the earliest in autumn on October 10th, ice first formed on October 12th, the last snow in spring was on the 3rd of May (0.3 inches), and the first in autumn on the 1st November (a few flakes only.)

Ice left the Bay on February 16th, reformed on March 1st, and people were skating on it. Bay clear of ice on March 25th. First schooner arrived on March 24th. First steamer arrived April 21st. Last schooner arrived on December 28th. Bay did not freeze over until 5th January, 1892.

GENERAL METEOROLOGICAL

MAGNETICAL OBSERVATORY,

Latitude 43° 39' 4" N. Longitude 5h. 17m. 34' 65" W. Elevation

	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.
Average temperature.....	24° 15	28° 02	28° 81	43° 24	51° 51	64° 34	63° 69
Difference from average (51 years)...	+ 1 67	+ 5 48	+ 0 11	+ 2 40	- 0 59	+ 2 29	- 3 98
Thermic anomaly (Lat. 43° 40').....	- 8 65	- 6 68	- 11 29	- 6 96	- 6 59	- 0 26	- 5 01
Highest temperature.....	41 9	49 0	52 1	77 5	78 0	91 9	83 9
Lowest temperature.....	- 2 0	2 1	4 7	20 5	30 2	42 5	45 0
Monthly and annual ranges.....	43 9	46 9	47 4	57 0	47 8	49 4	38 9
Average maximum temperature....	30 14	34 75	34 96	52 12	62 07	74 57	73 56
Average minimum temperature....	16 60	20 75	22 47	34 75	40 95	54 26	54 70
Average daily range.....	13 54	14 01	12 49	17 37	21 12	20 31	18 86
Greatest daily range.....	34 9	28 4	24 2	37 8	34 7	34 3	27 7
Average height of bar, at 32° Fah....	29 6256	29 5959	29 6883	29 5919	29 6657	29 5902	29 5982
Difference from average (50 years)...	- 0 0273	- 0 0423	+ 0 0855	- 0 0042	+ 0 0909	+ 0 0209	+ 0 0116
Highest barometer.....	30 251	30 248	30 200	30 695	29 942	29 946	29 979
Lowest barometer.....	28 850	28 845	28 782	29 170	29 408	29 302	29 146
Monthly and annual ranges.....	1 401	1 403	1 418	0 925	0 534	0 644	0 833
Average humidity of the air.....	85	79	77	71	59	68	73
Difference from average.....	+ 2	- 2	- 1	0	- 11	- 5	+ 1
Average elasticity of aqueous vapour..	0 119	0 129	0 126	0 204	0 232	0 419	0 427
Average temperature of dew point..	22 2	24 0	23 5	35 0	38 3	54 2	54 6
Average of cloudiness.....	0 74	0 66	0 67	0 54	0 61	0 51	0 53
Difference from average (37 years)...	00	- 03	+ 03	- 05	+ 05	- 02	+ 03
Resultant direction of wind.....	N 32° W	N 88° W	N 23° E	N 42° W	N 37° W	N 55° E	N 83° W
“ velocity of the wind.....	3 33	3 67	3 42	3 34	3 54	1 98	1 94
Average velocity (miles per hour)....	7 10	10 60	11 40	8 50	7 10	5 37	7 40
Difference from average (16 years)...	....	....	....	....	....	....	....
Total amount of rain in inches.....	1 915	1 670	1 260	2 295	0 495	3 050	2 160
Difference from average (51 years)...	+ 0 728	+ 0 774	- 0 193	+ 0 086	- 2 474	+ 0 134	- 0 882
Number of days of rain.....	7	9	7	12	11	11	12
Total amount of snow in inches.....	12 1	9 8	17 7	0 1	0 3	....	....
Difference from average (48 years)...	- 5 14	- 7 41	+ 4 50	- 2 30	+ 0 16	....	....
Number of days of snow.....	17	14	17	3	1	....	....
Number of fair days.....	11	9	11	16	19	19	19
Number of days completely clouded..	18	5	8	4	1	3	0
Number of auroras observed.....	0	2	1	3	0	0	0
Possible to see aurora (No. of nights)...	9	13	14	18	14	19	24
Number of thunderstorms.....	0	0	0	0	1	4	5
Number of fogs.....	10	0	2	3	0	4	4
Number of hours of bright sunshine..	69 6	104 3	141 0	195 3	236 0	242 4	247 7
Number of hours of possible sunshine..	285 7	291 4	369 9	406 5	461 1	465 7	470 9

REGISTER FOR THE YEAR 1891.

TORONTO, ONTARIO.

above Lake Ontario, 108 feet. Elevation above the Sea, 350 feet.

AUG.	SEPT.	OCT.	NOV.	DEC.	1891.	1890.	1889.	1888.	1887.	1886.	1885.
65°56 - 0°73 - 2°94	62°49 + 4°04 + 0°90	47°91 + 1°66 - 5°89	37°05 + 0°96 - 6°15	33°64 + 7°56 - 2°36	45°87 + 1°74 - 5°15	45°02 + 0°89 - 6°00	45°44 + 1°31 - 5°58	42°70 - 1°43 - 8°32	44°14 + 0°01 - 6°88	43°71 - 0°42 - 7°31	41°57 - 2°56 - 9°45
89°6 46°1 43°5 75°02 57°11 17°91 28°3	87°5 41°9 45°6 72°53 53°45 19°09 28°5	80°7 21°6 69°1 56°08 39°08 17°00 25°4	58°3 7°5 50°8 42°99 30°27 12°72 24°2	49°1 3°4 45°7 40°00 26°99 13°01 26°2	91°9 - 2°0 93°9 16°45 37°8	89°4 - 2°7 92°1 16°22 36°0	88°7 - 11°3 100°0 15°55 42°8	92°0 - 16°1 108°1 16°55 37°7	97°2 - 16°6 113°8 17°12 34°0	89°5 - 22°8 112°3 16°53 32°6	88°6 - 16°1 104°7 16°85 39°2
29°5899 - 0°0301	29°7206 + 0°0634	23°6768 + 0°0307	29°6463 + 0°0253	29°6440 + 0°0142	29°6385 - 0°0198	29°6313 - 0°0126	29°6177 - 0°0010	29°6448 + 0°0261	29°6329 + 0°0142	29°6255 + 0°0068	29°5933 - 0°0254
29°830 29°137 0°693	30°076 29°417 0°659	30°266 29°303 0°963	30°181 28°536 1°545	30°253 29°081 1°172	30°266 28°536 1°730	30°334 28°762 1°572	30°365 28°582 1°783	30°432 28°793 1°639	30°607 28°704 1°903	30°283 28°752 1°531	30°390 28°714 1°586
+ 78 + 4	+ 80 + 3	- 74 - 5	- 76 - 4	- 78 - 4	- 75 - 2	+ 78 + 1	- 77 0	- 74 - 3	- 75 - 2	- 77 0	- 77 0
0°492 58°6	0°459 56°6	0°263 41°6	0°181 32°0	0°155 28°3	0°267 42°0	0°272 42°5	0°271 42°4	0°243 39°5	0°261 41°4	0°260 41°3	0°249 40°1
0°54 + 0°04	0°36 - 0°15	0°52 - 0°11	0°78 + 0°03	0°60 - 0°17	0°59 - 0°03	0°62 0°00	0°63 + 0°01	0°63 + 0°01	0°63 + 0°01	0°61 - 0°01	0°61 - 0°01
N 59°W 0°78 5°50	West. 0°09 4°20	N 45°W 0°91 5°80	S 57°W 3°07 6°42	S 65°W 3°48 8°60	N 57°W 1°63 7°33	N 48°W 1°80 9°19 - 0°45	N 63°W 2°04 9°08 - 0°56	N 59°W 2°67 9°71 + 0°07	N 46°W 1°92 9°88 + 0°24	N 56°W 2°13 9°73 + 0°09	N 62°W 2°60 9°95 + 0°31
4°830 + 2°631 13	1°705 - 1°617 8	1°705 - 0°691 11	3°190 + 0°491 14	2°460 + 0°936 10	26°735 - 0°677 125	32°110 + 4°698 145	24°575 - 2°837 127	22°819 - 4°593 133	17°969 - 9°443 106	27°726 + 0°314 112	26°351 - 1°061 103
..... ..... .....	..... ..... .....	0°0 - 0°71 0	3°6 - 1°05 19	4°2 - 10°37 8	47°8 - 22°02 70	52°6 - 17°22 81	66°5 - 3°32 60	34°6 - 35°22 83	77°9 + 8°08 78	73°5 + 3°68 66	65°6 - 4°22 73
18 1	23 1	20 3	11 7	17 9	193 60	159 68	187 79	175 58	203 76	196 74	203 65
4 23	5 25	2 22	0 10	1 21	18 212	7 188	6 169	21 183	25 180	29 189	31 195
5 2	3 8	1 2	0 2	0 5	19 38	21 43	24 34	23 26	22 39	26 29	19 30
220°5 134°5	251°7 376°3	173°5 340°2	77°5 286°9	105°9 274°3	2065°4 4463°3	1977°6 4463°3	1909°2 4463°3	2043°3 4474°4	2063°5 4463°3	2034°4 4463°3	2018°3 4463°3

TEMPERATURE.

	1891.	Average of 51 years.	EXTREMES.	
	°	°	°	°
Average temperature of the year.	45·87	44·13	47·09 in 1878	40·77 in 1873
Warmest month.	August	July	July, 1868	Aug., 1860
Average temperature of the warmest month.	65·56	67·67	75·80	64·46
Coldest month.	January	January	Feb. 1875	Feb. 1848
Average temperature of the coldest month.	24·15	22·48	10 16	26·00
Difference between the temperature of the warmest and coldest month.	41·41	45·19	....	....
Average of deviations of monthly means from their respective averages of 51 years, signs of deviation being disregarded.	2·62	2·54	3·63	....
Month of greatest deviation without regard to sign.	Dec.	January	Feb. 1875	....
Corresponding magnitude of deviation.	7·56	4·02	12·27	....
Warmest day.	16 June	....	July 14, '68	July 31, '54
Average temperature of the warmest day.	77·62	77·87	84·50	72·75
Coldest day.	16 Jan.	....	Feb. 6, 1855 Jan. 22, '59	Dec. 22, '42
Average temperature of the coldest day.	5·13	-2·28	-14·38	9·57
Date of the highest temperature.	16 June	....	Aug. 24, '54	Aug. 19, 40
Highest temperature.	91·9	90·75	99·2	82·4
Date of lowest temperature.	16 Jan.	....	Jan. 10, '59	Jan. 2, 1842
Lowest temperature.	-2·0	-12·25	-26·5	1·9
Range of the year.	93·9	103·00	118·2	87·0

BAROMETER.

	1891.	Average of 50 years.	EXTREMES.	
Average pressure of the year.	29·6385	29·6187	{ 28·6779 in 1849	29·5602 in 1864
Month of the highest average pressure.	Sept.	Sept.	Jan. 1849	June, 1864
Highest monthly average pressure.	29·7296	29·6642	29·8046	29·6525
Month of the lowest average pressure.	June	June	March, 1859	Nov., 1859
Lowest monthly average pressure.	29·5902	29·5693	29·4143	29·5886
Date of the highest pressure in the year.	Oct. 12	....	Jan. 8, 1866	March 7, '78
Highest pressure.	30·266	30·365	30·940	30·139
Date of the lowest pressure in the year.	Nov. 23	....	Jan. 2, 1870	March 7, '45
Lowest pressure.	28·536	28·707	28·166	28·939
Range of the year.	1·739	1·658	{ 2·133 in 1866.	1·303 in 1845

RELATIVE HUMIDITY.

	1891.	Average of 50 years.	EXTREMES.	
Average humidity of the year.	75	77	82 in 1851	73 in 1858
Month of greatest humidity.	January	January	Jan., 1857	Dec., 1858
Greatest average monthly humidity.	85	83	89	81
Month of least humidity.	May	May	Feb., 1843	April, 1849
Least average monthly humidity.	59	70	58	76

EXTENT OF SKY CLOUDED.

	1891.	Average of 38 Years.	EXTREMES.	
Average cloudiness of the year.....	0.59	0.62	0.66 in '69	0.57 in 1856.
Most cloudy month.....	Nov.	Dec.	.....	.....
Greatest monthly average of cloudiness.....	0.78	0.77	0.89	0.73
Least cloudy month.....	Sept.	July.	.....	.....
Least monthly average of cloudiness.....	0.36	0.50	0.29	0.50

WIND.

	1891.	Average of 15 Years.	EXTREMES.	
Resultant direction.....	N. 57° W.	N. 61° W.	.....	.....
Resultant velocity in miles.....	1.63	2.51	.....	.....
Average velocity without regard to direction.....	7.33	9.64	10.54 in '80.	8.32 in '78.
Month of greatest average velocity.....	March.	March.	April, '80.	Dec., 1875.
Greatest monthly average velocity.....	11.40	11.49	13.88	10.42
Month of least average velocity.....	Sept.	July.	July, '78.	July, 1881.
Least monthly average velocity.....	4.20	7.56	5.93	8.43
Day of greatest average velocity.....	Oct. 13.	.....	Nov. 17, '80.	Feb. 10, '85.
Greatest daily average velocity.....	28.21	28.12	41.67	22.79
Day of least average velocity.....	June 10.	.....	.....	.....
Least daily average velocity.....	0.67	.....	.....	.....
Hour of greatest absolute velocity.....	Nov. 17. 2.3 p. m.	.....	Nov. 7, '80. 3 to 4 a. m.	Jan. 17, '85. 10 to 11 a. m.
Greatest velocity.....	60.0	43.77	55.5	39.0

NOTE—During the year 1891, the wind has been obtained from the records of the anemograph at the Island and the entries at observation hours, and no comparison has been made with the result of former years.

RAIN.

	1891.	Average of 51 Years.	EXTREMES.	
Total depth of rain in inches.....	26.735	27.412	43.555 in '43.	17.574 in '74.
Number of days on which rain fell.....	125	113	145 in 1890.	80 in 1841.
Month on which the greatest depth of rain fell..	Aug.	Sept.	Sept., 1843.	June, 1887.
Greatest depth of rain in one month.....	4.830	3.322	9.760	2.655
Month in which the days of rain were most frequent.....	Nov.	Oct.	{ Jan., '69. Oct., '90.	May, 1841.
Greatest number of rainy days in one month....	14	13	23	11
Day on which the greatest amount of rain fell..	Aug. 9.	.....	Sept. 14, '43	Sept. 14, '48
Greatest amount of rain in one day.....	2.435	1.888	3.455	1.000

SNOW.

	1891.	Average of 48 years.	EXTREMES.	
Total depth of snow in inches.....	47·8	69·8	122·9 in '70.	34·6 in '88.
Number of days in which snow fell.....	70	66	87 in 1859.	33 in '48.
Month in which the greatest depth of snow fell.	March	January.	March, '70.	Dec., 1851.
Greatest depth of snow in one month.....	17·7	17·2	62·4	10·7
Month in which the days of snow were most frequent.....	Jan. & } March }	January.	Dec., 1872.	Feb., 1848.
Greatest number of days of snow in one month.	17	14	24	8
Day in which the greatest amount of snow fell.....	11th Jan.	—	{ Feb. 5, '63. Mar. 27, '70.	{ 4-6 Jan '88
Greatest fall of snow in one day.....	5·2	9·1	16·0	3·0

SUNSHINE.

	1891.	Average 1882 to 1890.
Total duration of bright sunshine in hours.....	2065·4	2021·3
Ratio to possible amount.....	0·46	0·45
Month of greatest relative amount.....	September.	July.
Ratio to possible amount.....	0·67	0·61
Month of least relative amount.....	January.	December.
Ratio to possible amount.....	0·24	0·19
Number of days completely clouded.....	60	72
Day of greatest relative amount.....	December 12	—
Ratio to possible amount.....	0·94	0·91

DIFFERENCES OF CERTAIN METEOROLOGICAL ELEMENTS FOR 1891 FROM
THE NORMAL VALUES FOR EACH QUARTER AND YEAR.

	Bar.	Tem.	Rain.	Days Rain.	Snow.	Days Snow.	Cloud- ed Sky.
	in.	°	in.		in.		p.c.
Winter.....	+ '0050	+ 2·42	+ 1·309	+ 7·15	— 7·75	+ 10·10	— 0·00
Spring.....	+ '0059	+ 1·37	— 2·254	+ 0·71	— 2·14	0·00	— 0·01
Summer.....	+ '0150	— 0·22	— 0·468	— 0·61	—	—	— 0·03
Autumn.....	+ '0234	+ 3·39	+ 0·736	+ 5·65	— 12·13	— 2·76	— 0·08
Year.....	+ '0158	+ 1·74	— 0·677	+ 12·29	— 22·02	+ 4·34	— 0·03

PERIODICAL OR OCCASIONAL EVENTS, 1891.

- January. 1. Very mild, heavy rain. 2nd, rapid fall of temperature, by morning 0
3rd a change of 41° had occurred. 16th, Coldest day of year, average
5°-13.
18. Robins numerous. 21st, Woodpeckers numerous. 27th, Black Cap Tit-
mouse.
- February 6. Robins, Greybirds and Bluejays numerous.
- March. 26. Robins and Crows numerous. 29th, Butterflies seen.
- April 30. Greybirds, Hawks, Blackbirds and Bobolinks seen.
- April 2. Meadow Larks seen. 13th, Frogs heard. 22nd, Blackbirds numerous.
- May 18. First lightning of year.
- May 3. Last snow of season. 6th, Gulls flying N. 7th, Fireflies seen.
- May 8. Plum Trees and Pear Trees in bloom. 9th, Swallows seen; Humming
Birds seen.
- May 10. Whip-poor-Will seen.
- June. 14. Oriole seen. 15th, Thin ice. Last frost of season, 23rd
- June. 11. Heavy thunderstorm; 0·62 in. of rain fell in 16 minutes, 2 to 3 p. m.
- June. 16. Warmest day of year; heavy thunderstorm; 1·28 in. of rain fell in a
little over an hour.
- August. 9. Almost constant succession of thunderstorms all day; 2·44 in. of rain fell.
- October. 10. Hoar frost, first of season. 11th, Swallows last noted.
- October. 13. First ice noted. 26th, Last thunderstorm.
- November. ... 1. First snow of season. 18th, First measurable snow.
- November. ... 19. River Don frozen.
- December 9. Large flock of small birds about.
- December 27. Bluebird seen.
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